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AB

ANSWER 16 OF 28 HCAPLUS COPYRIGHT 2008 ACS on STN
The apparatus has (1) a pulling shaft which is divided to an upper and a lower shaft connected to each other by a wire there between, and a means to lift the lower shaft, or (2) an upper shaft installed at the

lower end of a weight sensor and a lower shaft installed on the upper end of a force bar (e.g., made from a C material) connected to each other by a wire, and a means to lift the force bar. A number of ceramic or stainless steel balls, or a guide collar from a C material may be placed between a guide shaft, which surrounds the upper and the lower shaft, the wire, and the force bar, and the force bar. A long crystal can be grown without increase of the total height of the apparatus

AN 1996:457854 HCAPLUS

DN 125:100869

TI Czochralski apparatus

IN Umeki, Toshiro

PA Komatsu Denshi Kinzoku KK, Japan; Komatsu Electric Metal Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08119790	A	19960514	JP 1994-276000	19941014
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	JP 3526927	B2	20040517		
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PRAI	JP 1994-276000		19941014		
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ANSWER 17 OF 28 HCAPLUS COPYRIGHT 2008 ACS on STN
A metal rod for detector cooling reaching the outside of the outer surface of the cryostat main body is installed in the low-temperature stage of the cryostat which was cooled to ≤ 1 K, ≥ 2 layers of cooled radiation-shielding walls are installed to cover its surrounding, an outer wall for maintaining the vacuum of the cryostat is installed, a hole for the radiation to impinge from the outside of the cryostat to the tip of the cooling metal rod or a window made of a material which transmits the radiation and shield the radiation is formed at the radiation heat-shielding wall in the vicinity of the tip of the cooling metal rod, and a window made of a material which transmits the radiation is formed at the outer wall for maintaining the vacuum. A superconductive tunnel junction is used for the radiation detector in the cryostat and a superconductive coil for applying a magnetic field parallel to the junction surface of the detector is installed in the vicinity of the detector of the radiation heat shielding wall or the cooling rod. An anal. device with high sensitivity can be provided.

AN 1996:25249 HCAPLUS

DN 124:69525

TI Helium 3 cryostat for radiation detector and analytical device

IN Kurakado, Masahiko; Ikematsu, Yoichi

PA Shinnippon Seitetsu KK, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 07253472	A	19951003	JP 1994-105786	19940519
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PRAI	JP 1994-105786	A	19940519		
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	JP 1994-6636		19940125		
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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-119790

(43)Date of publication of application : 14.05.1996

(51)Int.Cl.

C30B 15/30
C30B 15/28
C30B 29/06
H01L 21/208

(21)Application number : 06-276000

(71)Applicant : KOMATSU ELECTRON METALS
CO LTD

(22)Date of filing : 14.10.1994

(72)Inventor : UMEKI TOSHIRO

(54) SEMICONDUCTOR SINGLE CRYSTAL PULL DEVICE

(57)Abstract:

PURPOSE: To provide a semiconductor single crystal pull device of shaft scheme reduced in height, designed to prevent the life time of single crystals produced from being shortened due to metallic powder falling from the periphery of the force bar onto the melt, by dividing a pull shaft into upper and lower shafts which are mutually connected with a wire, and installing a means to conduct vertical motions of the lower shaft.

CONSTITUTION: A pull shaft is divided into upper and lower shafts and they are mutually connected with a wire and when a single crystal is to be drawn out of an oven; in this case, if the rise of the upper shaft is halted and the lower shaft is driven, only the portion below the lower shaft can be raised; therefore, a single crystal of continuous length can be pulled up even there is no need of increasing the whole height of the device. The figure shows the gross structure of the pull shaft based on weight-type diameter control scheme. As shown in the figure, a force bar having been conventionally integral construction, is made up of the upper shaft 1, wire 2, lower shaft 3, and force bar 4 (made of carbon), being revolvable integrately with a weight sensor 5 and a seed chuck 6, and standing enclosed as a whole by a guide shaft 7.

